# Science Funding from 10,000 Feet:
## An OMB Worker Bee's Perspective

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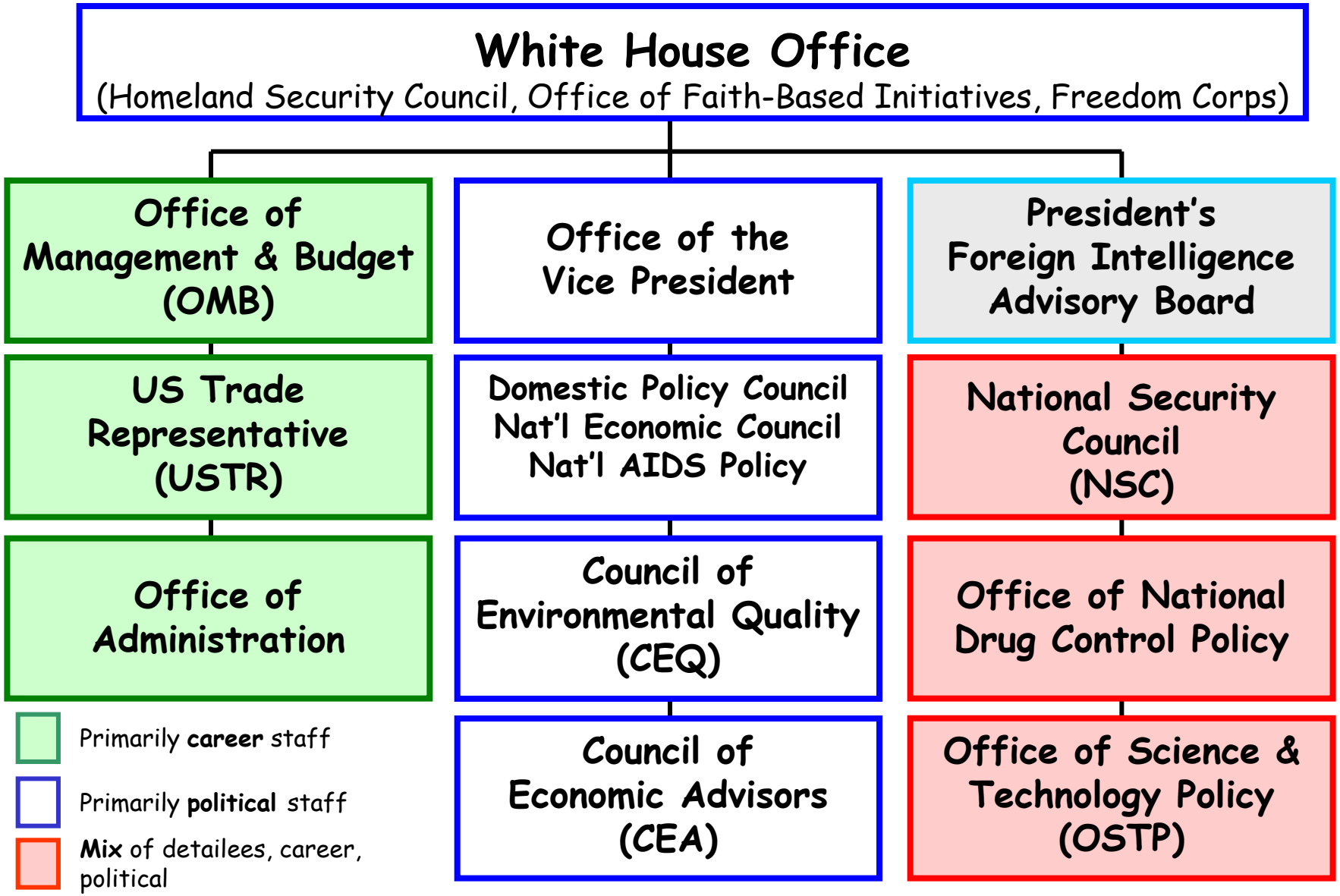
# Executive Office of the President (EXOP)



# What does OMB do?

- Assists the President in the development and execution of his policies and programs
- Has a hand in the development and resolution of all budget, policy, legislative, regulatory, procurement, e-gov't, and management issues on behalf of the President

# Find Joel in the OMB Hierarchy

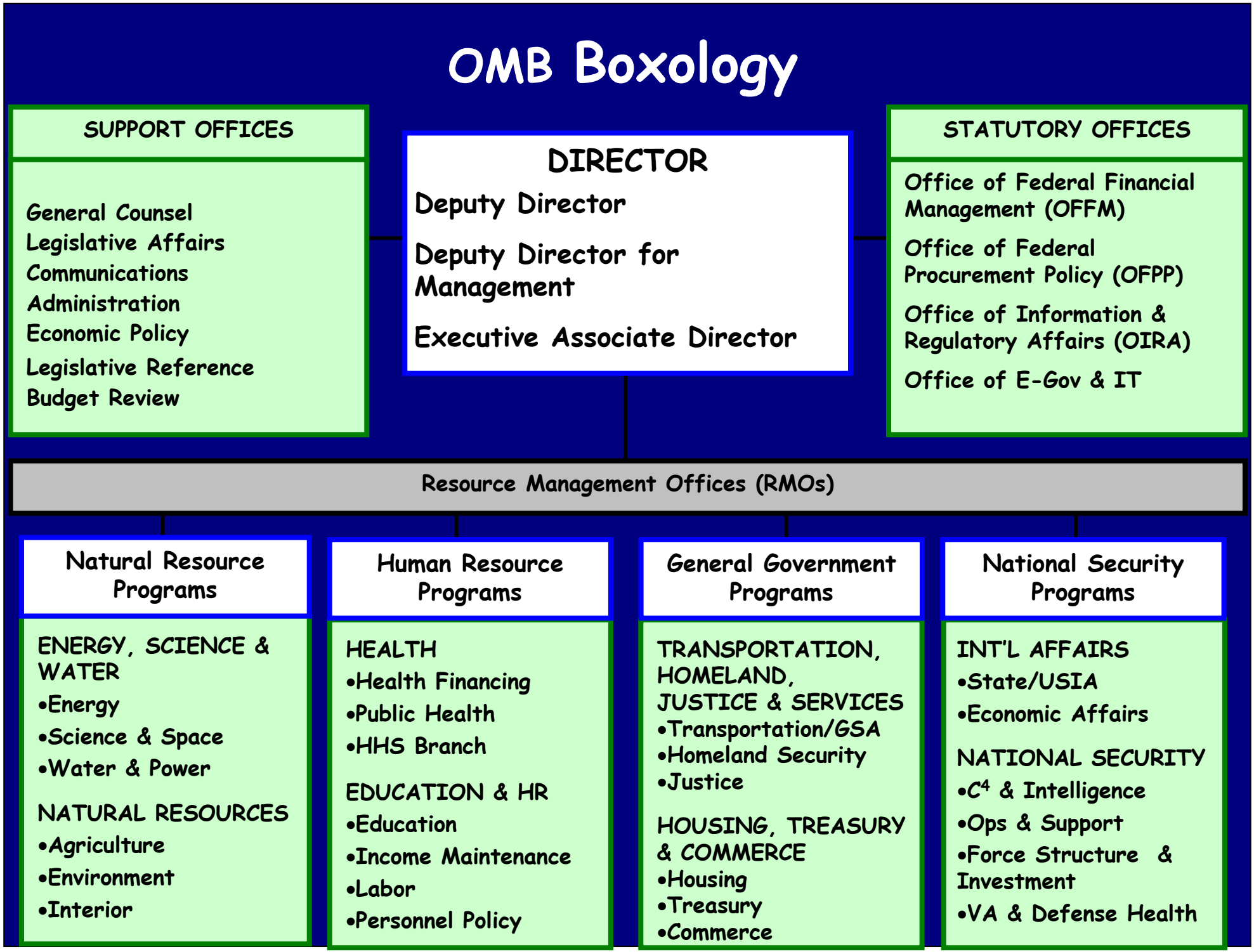
## Political – make decisions

- Director (NB: Pres. Cabinet member)
- Deputy Directors
- Program Associate Directors or PADs

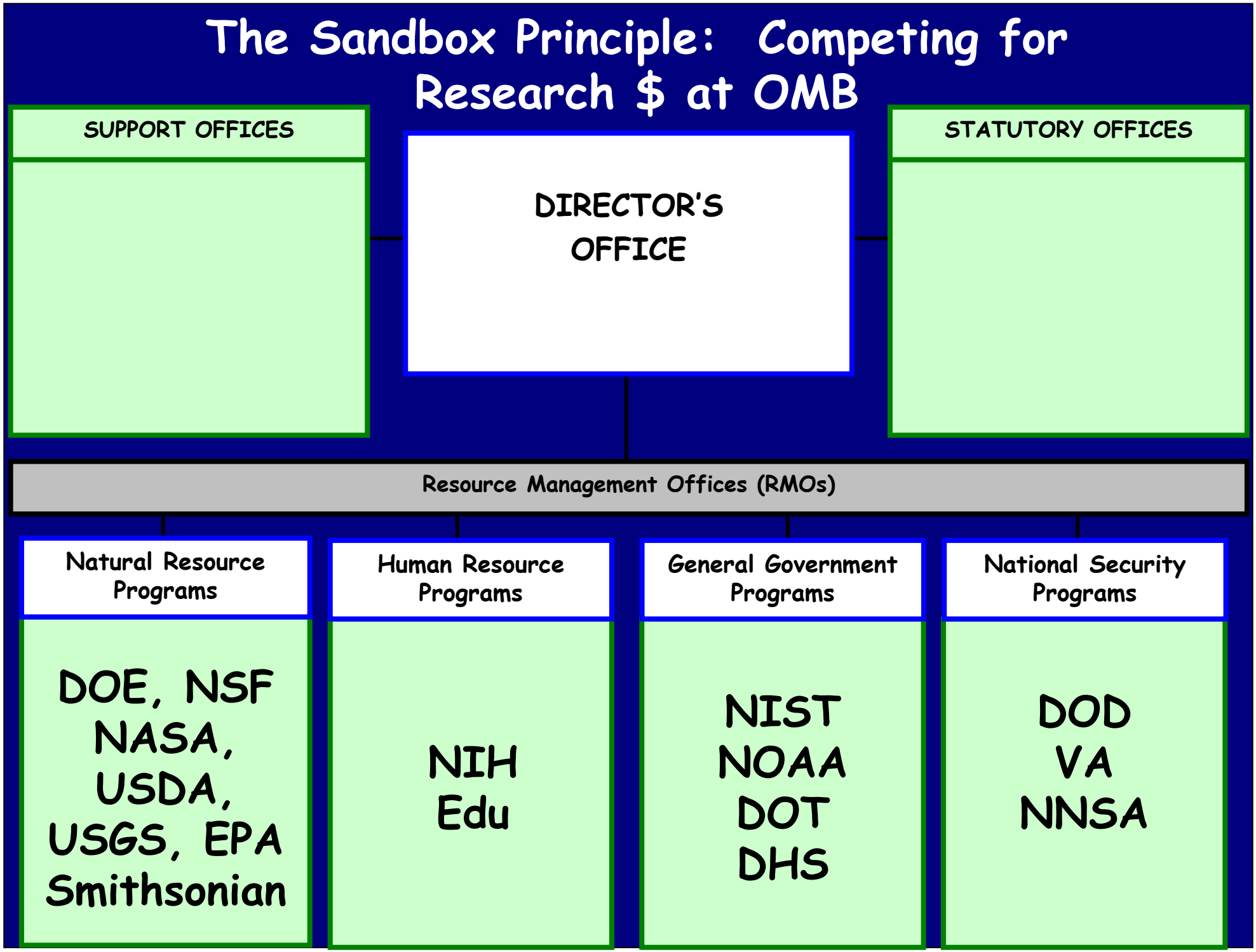
## Career – make recommendations

- Deputy Associate Directors or DADs
- Branch Chiefs
- Program Examiners

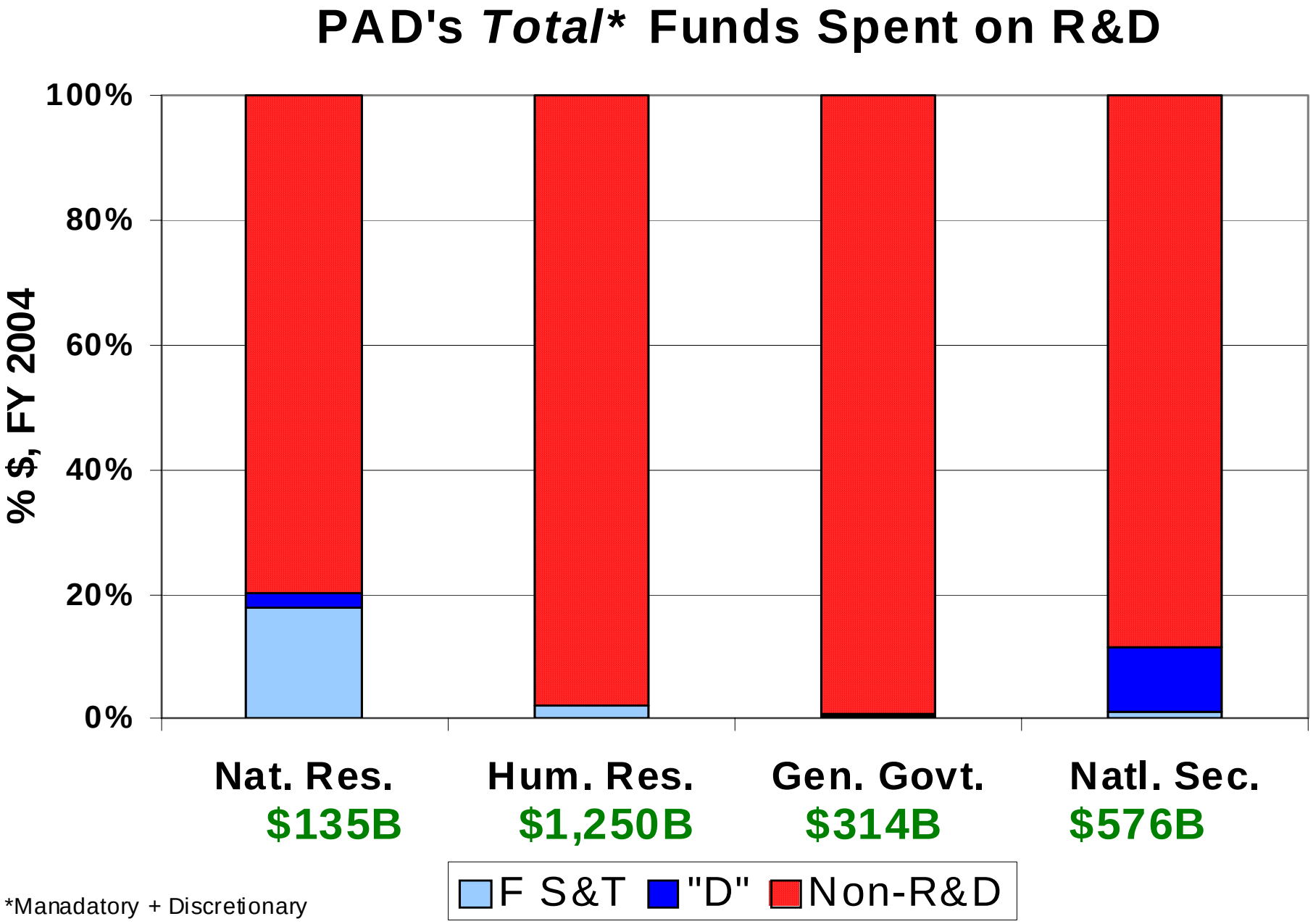
# OMB Boxology



# The Sandbox Principle: Competing for Research $ at OMB



# Relative Visibility of R&D Programs, by PADship




*Manadatory + Discretionary

# OMB Budgeting—
# Fix your own problems

- To begin with, here are N dollars (NB: may be higher or lower than agency draft budget)
- Take care of the President's priorities
- Take care of other Administration priorities
- Be cognizant of Congressional priorities, especially where they might be at odds with above, and address as appropriate
- Fix other miscellaneous problems as possible (e.g., stewardship of disciplines and institutions)
- Present your recommended program and clearly identify where problems remain

# OMB Budgeting— Addressing lingering problems

- What are the consequences for not addressing this problem?
- What's the political landscape if one exists?
- Is there a full or partial legislative or management solution available?
- Is more money really the only viable solution?
- Why didn't you use funds from lower-priority efforts within the account? Is this account optimizing the use of the funds it does have?
- What's the compelling policy argument for the proposed solution?

# Addressing the perceived communication breakdown

- We can probably agree on a broad set of ultimate goals (e.g., near- and long-term security, a better world for future generations, etc.), so perceived differences come from the best way to reach these goals
- Speaking a common language begins with an attempt to understand the ethos & mythos of other stakeholders
- It is possible to make a better case for addressing the perceived problems of the S&T community

# Ethos & Mythos—
# S&T community

- Basic research is critical to the long-term interests of the U.S.
- More research money is always good, less is always bad
- Producing the next generation of scientists is of paramount importance
- The Administration must not understand (or perhaps be hostile to) our compelling arguments, or else they would follow our recommendations
- We're smart, so you should listen and send us more $ and we'll do good things…

# Ethos & Mythos—OMB staff

- Large, sustained budget deficits should be avoided if possible
- Basic research is a good thing and support is typically a clear Federal role, but it's difficult/impossible to know when investment is sub-critical and generational timescales add to the complexity of the analysis
- Appetite of community for more $$ is boundless; everyone claims to be doing compelling, ripe-for-great-advance work
- It's difficult to impossible for the most of the S&T community to set priorities
- Universities are good; national labs are unique but uncontrollable entities
- Federal gov't needs to more wisely & efficiently spend $$

# Making a better case

- **Work to put yourselves in our shoes**
  - How would you realistically implement your own recommendations within a fixed budget envelope?
  - Consider the competition and think broadly
  - Use the framework of the R&D Investment Criteria to drive arguments
- **Improve your consensus reports**
  - Apply the same level of logical rigor as you do for peer-reviewed journals (expose assumptions & context; admit limitations; data, not anecdotes, should drive arguments)
  - Spend more time on executive summary and navigation
  - Workforce arguments are typically weak ones…let the science drive the case
  - Well grounded constructive criticism adds to your credibility (we know things are not perfect, so alternative for us is to assume less than full honesty on your part)
  - Strong outsiders add to your credibility (e.g., EPP2010)

# OMB/OSTP
# R&D Investment Criteria

## Quality

- Prospective Merit Review of Awards
- Retrospective Expert Review of Program Quality

## Relevance

- Definition of Program Direction and Relevance
- Retrospective Outcome Review to Assess Program Design and Relevance

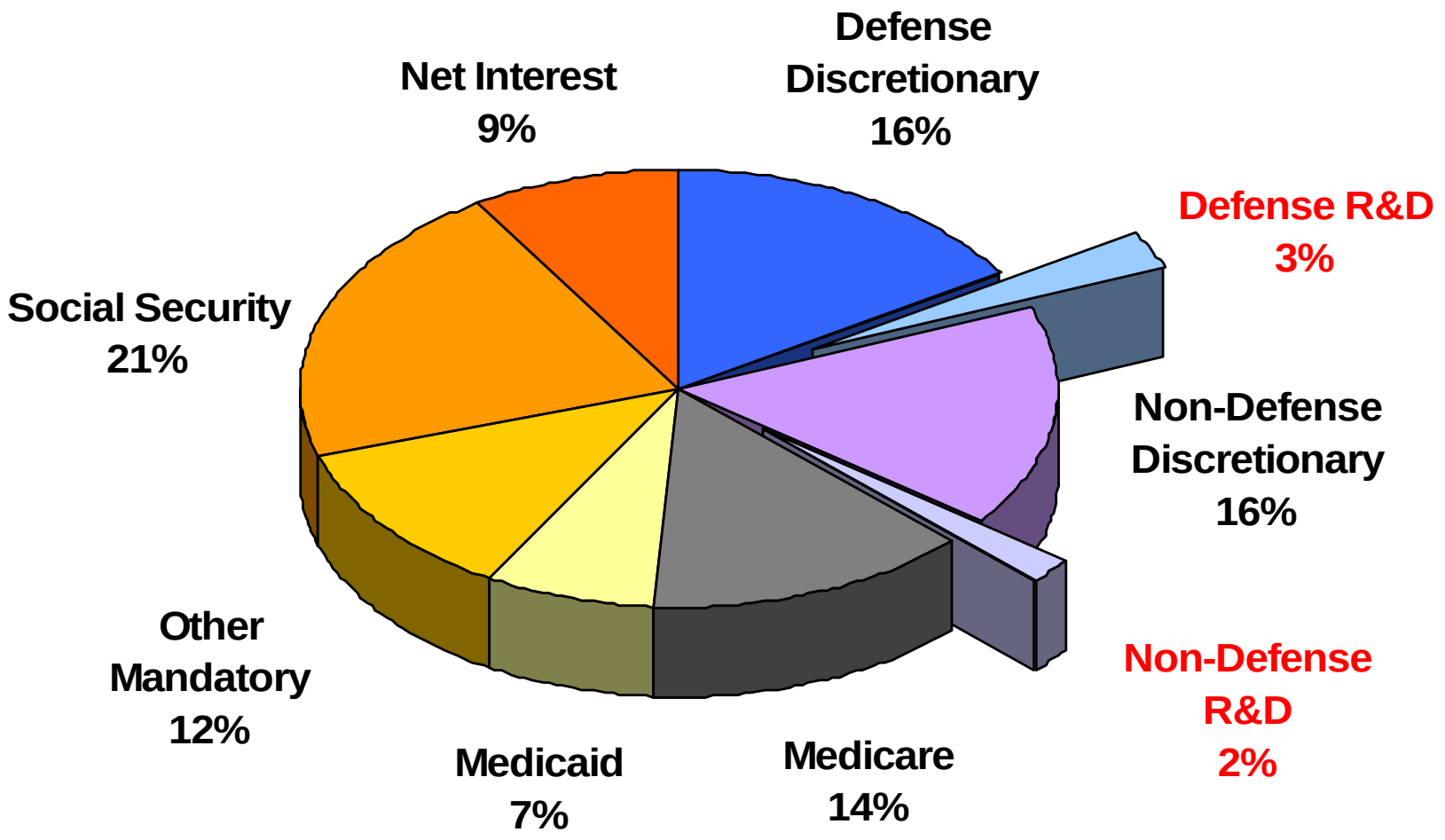
## Performance

- Prospective Assessment of Program Inputs and Output Performance Measures
- Demonstration of Performance

# Investment Criteria:
## One Systematic Evaluation Process

| | Quality | Relevance | Performance |
|---|---|---|---|
| Prospective | [1] Mechanism of Award (e.g., 10 CFR 605)<br>[2] Justification of funding distribution among classes of performers | Planning & Prioritization | "Top N" Milestones<br>(5 < N < 10) |
| Retrospective | [1] Expert reviews of successes and failures<br>[2] Information on major awards | Evaluation of utility of R&D results to both field and broader "users" | Report on "Top N" Milestones |

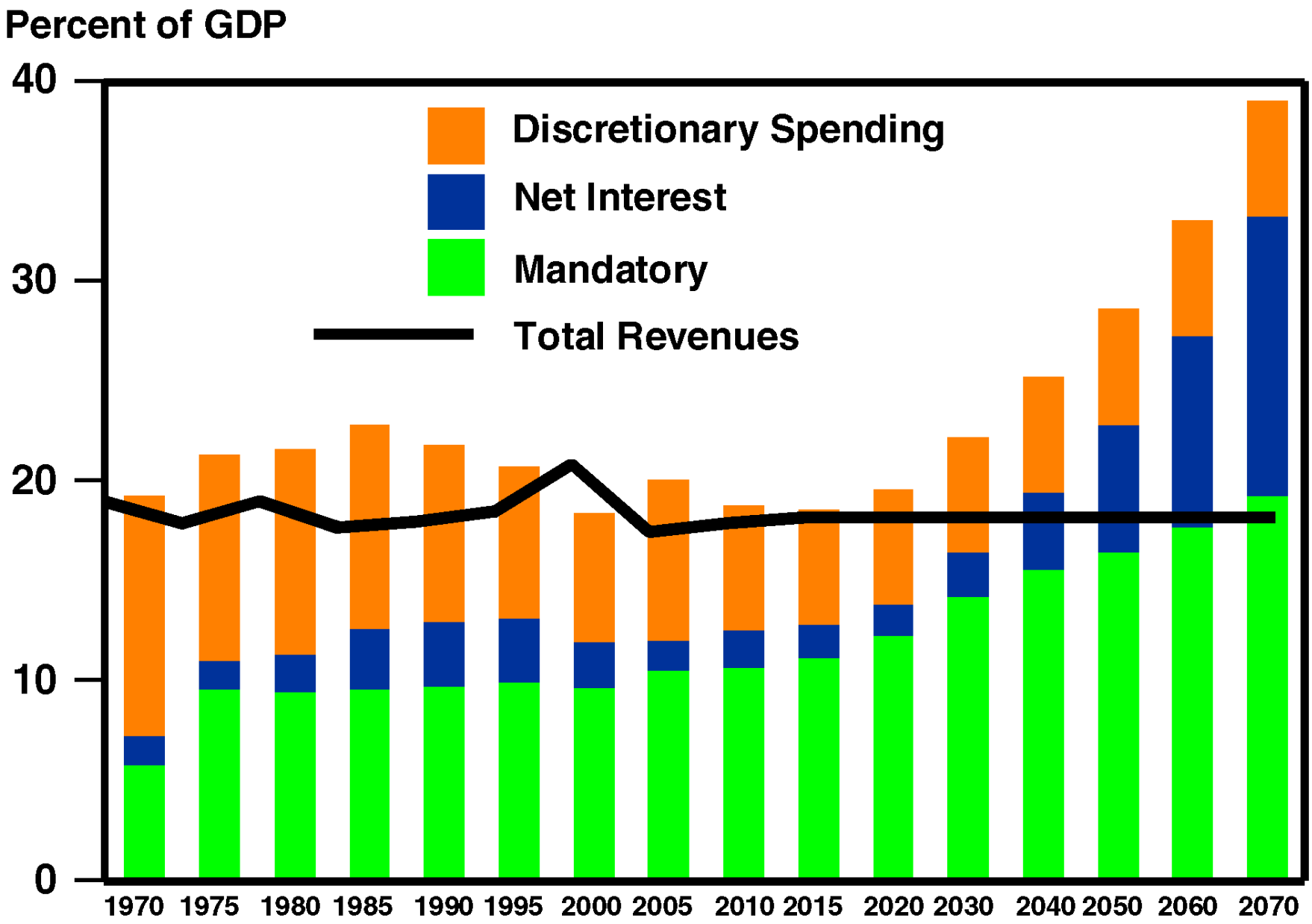
# President's FY 2007 Budget Request ($2.8 Trillion in Outlays)



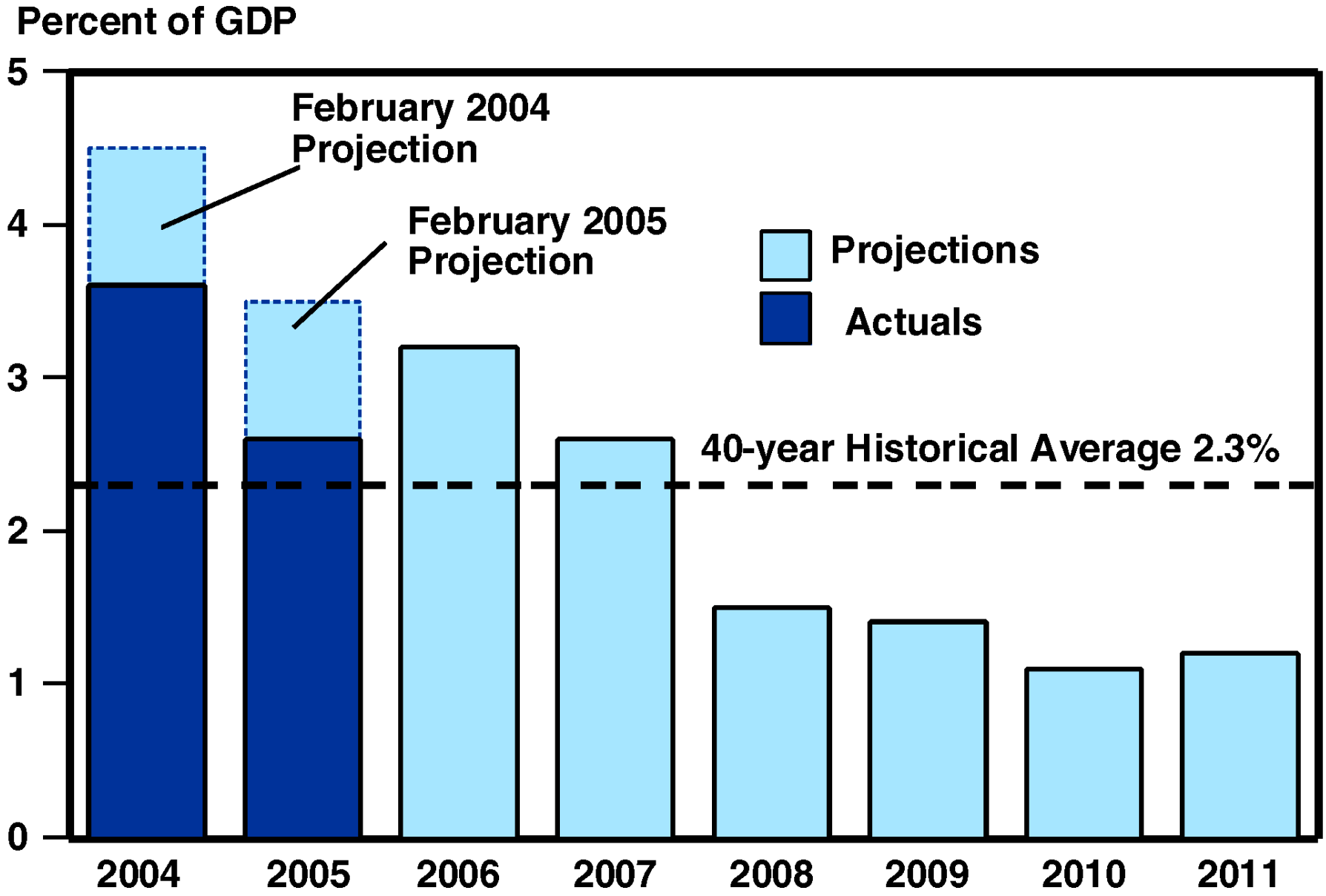

"It helps to think of the government as an insurance company with an army."
(Mike Holland, OSTP; *Science*, 4/11/03)

*R&D = 13% of discretionary spending; near historical average*

# Current Trends Are Not Sustainable

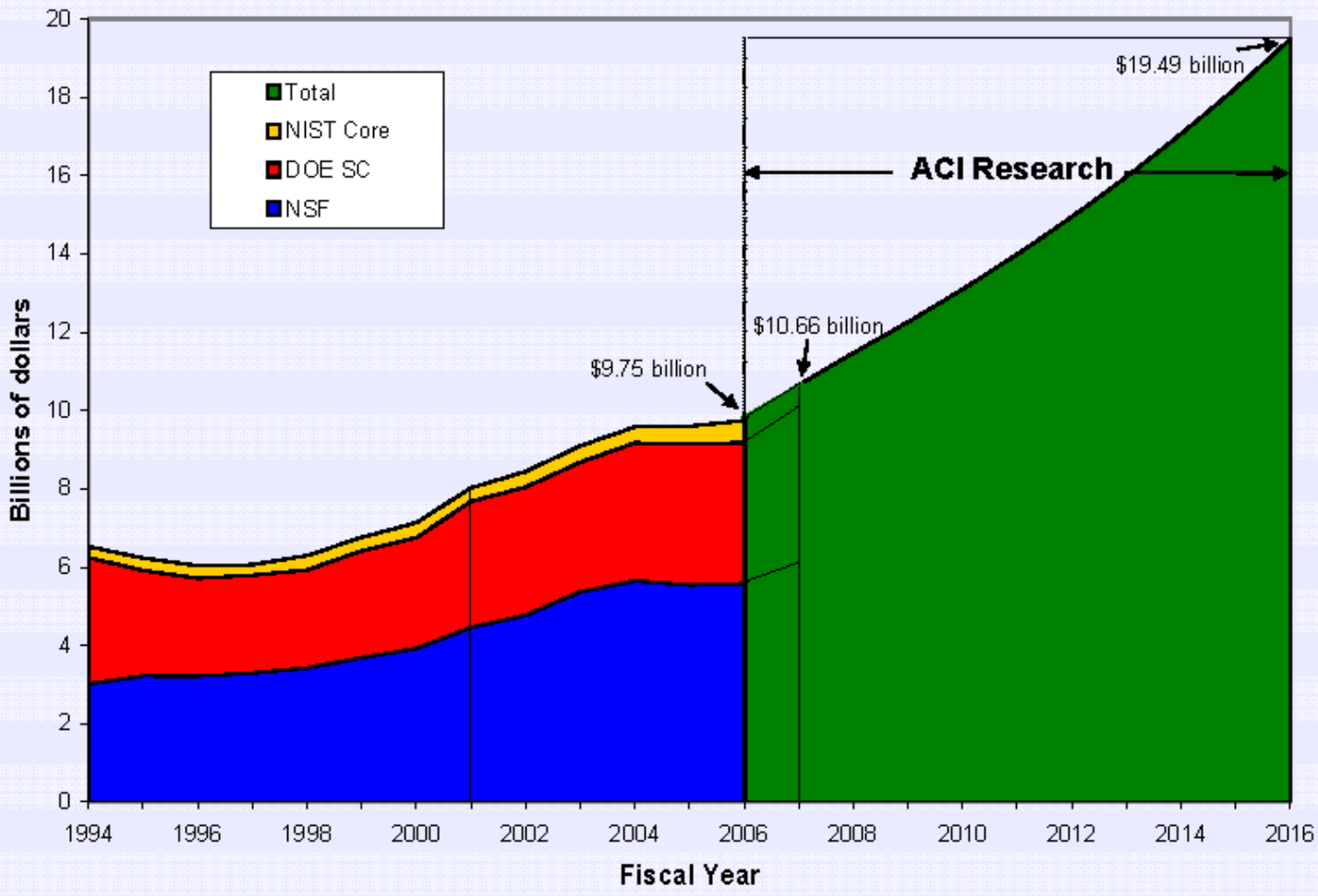


# Cutting the Deficit in Half



# President's American Competitiveness Initiative

**Figure 1: ACI Research Funding, 2007-2016.**



# Fusion Issues

- Conclusions of past NAS reports are still valid and influence EOP thinking; we await Plasma 2010
- Recent FESAC reports
  - "Priorities" and Facilities
  - Responsive to charge statements, but still don't have your advice on science- & priority-driven strategy for the entire U.S. program as component of larger international effort
- Other communities have faced tough choices and emerged better for it

# Fusion Issues Con't

- Us versus them?
  - Energy/Science
  - ITER/"Base" Program
  - Universities/National Labs
  - Facility Operations/Research Grants
  - Magnetic/Inertial
- What about HEDP?
  - OSTP-led process underway
- Are most resources available via open, merit-based competition?

# Views of an Important Congressional Supporter: Chairman Boehlert

"Congress is not besieged by groups asking for money that they describe as necessary to help their own narrow interests in the short run. The argument that science funding is a long-term national investment does nothing to set scientists apart. All that sets you apart is that scientists are the only group that thinks they're making a unique argument." (3/15/04)

"I am not going to allow the U.S. to enter into an international commitment that it cannot afford. I would rather kill the ITER project. The fusion community will have to be realistic. It cannot have all its current projects and ITER. And it will not." (11/9/05)